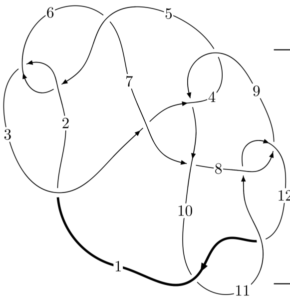
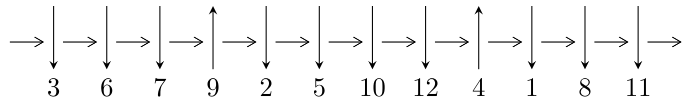
$12a_{0210}$ ($K12a_{0210}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$2,5 \xrightarrow[c_5]{} 6 \xrightarrow[c_2]{} 3 \xrightarrow[c_6]{} 7 \xrightarrow[c_3]{} 4,10 \xrightarrow[c_7]{} 8 \xrightarrow[c_1]{} 1 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_9]{} 9 \xrightarrow[c_{12}]{} 12 \twoheadrightarrow c_4, c_8, c_{11}$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$I_1^u = \langle -u^{17} + 3u^{15} + u^{14} - 7u^{13} - 2u^{12} + 9u^{11} + 5u^{10} - 10u^9 - 5u^8 + 7u^7 + 6u^6 - 5u^5 - 3u^4 + u^3 + 2u^2 + b,$$
$$- u^{15} + 2u^{13} + u^{12} - 4u^{11} - u^{10} + 3u^9 + 3u^8 - 3u^7 - u^6 + u^5 + 2u^4 - u^3 + a - u,\ u^{18} - 3u^{16} + \cdots + 2u +$$
$$I_2^u = \langle 3u^{83} + 6u^{82} + \cdots + b - 1,\ 7u^{83} + 10u^{82} + \cdots + 2a - 11,\ u^{84} + 3u^{83} + \cdots + 2u - 1\rangle$$
$$I_3^u = \langle b,\ a + 1,\ u^3 - u^2 + 1\rangle$$
$$I_4^u = \langle b,\ a^2 - au + 2u^2 - 3u + 2,\ u^3 - u^2 + 1\rangle$$
$$I_5^u = \langle b - 2,\ a - 1,\ u + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 112 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $I_1^u =$
$\langle -u^{17}+3u^{15}+\cdots+2u^2+b,\ -u^{15}+2u^{13}+\cdots+a-u,\ u^{18}-3u^{16}+\cdots+2u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2+1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^7-2u^5+2u^3-2u \\ -u^7+u^5-2u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{15}-2u^{13}-u^{12}+4u^{11}+u^{10}-3u^9-3u^8+3u^7+u^6-u^5-2u^4+u^3+u \\ u^{17}-3u^{15}+\cdots-u^3-2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{16}+3u^{14}+\cdots-u^2+1 \\ u^{16}-2u^{14}+\cdots-u^4+2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{15}-2u^{13}-u^{12}+4u^{11}+u^{10}-3u^9-3u^8+3u^7+u^6-2u^4+u^3+u \\ u^{17}-3u^{15}+\cdots+3u^4-2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{14}-3u^{12}+\cdots+2u^2+2u \\ -u^{14}+2u^{12}+u^{11}-5u^{10}-u^9+5u^8+3u^7-6u^6-u^5+3u^4+2u^3-2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{17}-2u^{15}-u^{14}+4u^{13}+u^{12}-3u^{11}-3u^{10}+3u^9+u^8-2u^6+u^5+2u^3 \\ -u^{15}+3u^{13}+\cdots-2u^3-2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{17}+4u^{16}+8u^{15}-10u^{14}-24u^{13}+26u^{12}+42u^{11}-30u^{10}-66u^9+34u^8+66u^7-16u^6-66u^5+8u^4+32u^3+8u^2-16u-14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_{10} c_{12}	$u^{18} + 6u^{17} + \cdots + 2u + 1$
c_2, c_5, c_8 c_{11}	$u^{18} - 3u^{16} + \cdots + 2u + 1$
c_3, c_7	$u^{18} - 2u^{17} + \cdots + 4u + 1$
c_4, c_9	$u^{18} - 6u^{17} + \cdots - 24u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_{10} c_{12}	$y^{18} + 14y^{17} + \cdots + 22y + 1$
c_2, c_5, c_8 c_{11}	$y^{18} - 6y^{17} + \cdots - 2y + 1$
c_3, c_7	$y^{18} - 10y^{17} + \cdots - 2y + 1$
c_4, c_9	$y^{18} + 8y^{17} + \cdots + 256y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.852988 + 0.599070I$ $a = \ \ 1.86967 + 1.04403I$ $b = -1.54451 + 0.51046I$	$2.34312 - 4.73471I$	$-7.07668 + 6.82584I$
$u = \ \ 0.852988 - 0.599070I$ $a = \ \ 1.86967 - 1.04403I$ $b = -1.54451 - 0.51046I$	$2.34312 + 4.73471I$	$-7.07668 - 6.82584I$
$u = \ \ 0.713575 + 0.772455I$ $a = -1.68389 + 1.91803I$ $b = \ \ 0.92095 - 1.86302I$	$5.76795 - 0.42490I$	$-2.62552 + 1.94246I$
$u = \ \ 0.713575 - 0.772455I$ $a = -1.68389 - 1.91803I$ $b = \ \ 0.92095 + 1.86302I$	$5.76795 + 0.42490I$	$-2.62552 - 1.94246I$
$u = -0.680242 + 0.830816I$ $a = \ \ 1.80309 + 1.05417I$ $b = -1.63673 - 1.25883I$	$3.89996 - 5.56871I$	$-4.31829 + 2.06139I$
$u = -0.680242 - 0.830816I$ $a = \ \ 1.80309 - 1.05417I$ $b = -1.63673 + 1.25883I$	$3.89996 + 5.56871I$	$-4.31829 - 2.06139I$
$u = \ \ 1.088500 + 0.110069I$ $a = -0.751912 + 0.070278I$ $b = -1.65982 + 0.10721I$	$-9.12746 - 5.02050I$	$-18.4222 + 4.8342I$
$u = \ \ 1.088500 - 0.110069I$ $a = -0.751912 - 0.070278I$ $b = -1.65982 - 0.10721I$	$-9.12746 + 5.02050I$	$-18.4222 - 4.8342I$
$u = -1.012600 + 0.591290I$ $a = -0.91949 - 1.13440I$ $b = \ \ 0.066057 + 0.911088I$	$-3.35551 + 7.83027I$	$-12.5543 - 7.9398I$
$u = -1.012600 - 0.591290I$ $a = -0.91949 + 1.13440I$ $b = \ \ 0.066057 - 0.911088I$	$-3.35551 - 7.83027I$	$-12.5543 + 7.9398I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.997184 + 0.703282I$ $a = 1.01150 - 3.14671I$ $b = 1.47517 + 2.11590I$	$4.02002 - 10.78450I$	$-6.41328 + 8.53348I$
$u = 0.997184 - 0.703282I$ $a = 1.01150 + 3.14671I$ $b = 1.47517 - 2.11590I$	$4.02002 + 10.78450I$	$-6.41328 - 8.53348I$
$u = -0.623040 + 0.431726I$ $a = -0.237344 + 0.890114I$ $b = 0.157083 + 0.325898I$	$-0.68211 + 1.26711I$	$-9.25343 - 4.35410I$
$u = -0.623040 - 0.431726I$ $a = -0.237344 - 0.890114I$ $b = 0.157083 - 0.325898I$	$-0.68211 - 1.26711I$	$-9.25343 + 4.35410I$
$u = -1.029700 + 0.727727I$ $a = -0.09346 - 2.99952I$ $b = -2.04495 + 1.32035I$	$1.7668 + 17.2595I$	$-7.77898 - 11.27344I$
$u = -1.029700 - 0.727727I$ $a = -0.09346 + 2.99952I$ $b = -2.04495 - 1.32035I$	$1.7668 - 17.2595I$	$-7.77898 + 11.27344I$
$u = -0.306671 + 0.477938I$ $a = 0.001829 + 0.467096I$ $b = -0.233244 + 0.353264I$	$-0.520477 + 1.222060I$	$-5.55737 - 4.78188I$
$u = -0.306671 - 0.477938I$ $a = 0.001829 - 0.467096I$ $b = -0.233244 - 0.353264I$	$-0.520477 - 1.222060I$	$-5.55737 + 4.78188I$

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle 3u^{83}+6u^{82}+\cdots+b-1,\ 7u^{83}+10u^{82}+\cdots+2a-11,\ u^{84}+3u^{83}+\cdots+2u-1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^7 - 2u^5 + 2u^3 - 2u \\ -u^7 + u^5 - 2u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{7}{2}u^{83} - 5u^{82} + \cdots - 3u + \frac{11}{2} \\ -3u^{83} - 6u^{82} + \cdots - 3u + 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{2}u^{83} - \frac{3}{2}u^{82} + \cdots - \frac{15}{2}u^2 - \frac{9}{2}u \\ u^{19} - 3u^{17} + \cdots + 4u^2 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -12.5000u^{83} - 28.5000u^{82} + \cdots - 28.5000u + 15.5000 \\ 8u^{83} + 16u^{82} + \cdots + 9u - \frac{9}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{21}{2}u^{83} - 23u^{82} + \cdots - 21u + \frac{25}{2} \\ 5u^{83} + 10u^{82} + \cdots + 5u - 3 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{83} + 3u^{82} + \cdots + 6u + \frac{1}{2} \\ -\frac{1}{2}u^{83} - u^{82} + \cdots - u + \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{33}{2}u^{82} - \frac{35}{2}u^{81} + \cdots - \frac{97}{2}u + \frac{21}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_{10} c_{12}	$u^{84} + 27u^{83} + \cdots + 20u + 1$
c_2, c_5, c_8 c_{11}	$u^{84} + 3u^{83} + \cdots + 2u - 1$
c_3, c_7	$u^{84} - 3u^{83} + \cdots + 76888u - 5953$
c_4, c_9	$(u^{42} + 3u^{41} + \cdots - 36u - 8)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_{10} c_{12}	$y^{84} + 61y^{83} + \cdots - 492y + 1$
c_2, c_5, c_8 c_{11}	$y^{84} - 27y^{83} + \cdots - 20y + 1$
c_3, c_7	$y^{84} + y^{83} + \cdots - 880217508y + 35438209$
c_4, c_9	$(y^{42} + 21y^{41} + \cdots + 304y + 64)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.712297 + 0.693306I$ $a = 2.23429 - 0.72427I$ $b = -1.31799 + 1.19951I$	$-0.0807684 + 0.0270051I$	0
$u = 0.712297 - 0.693306I$ $a = 2.23429 + 0.72427I$ $b = -1.31799 - 1.19951I$	$-0.0807684 - 0.0270051I$	0
$u = -0.981209 + 0.106389I$ $a = -1.063230 + 0.239722I$ $b = -1.31799 + 1.19951I$	$-0.0807684 + 0.0270051I$	0
$u = -0.981209 - 0.106389I$ $a = -1.063230 - 0.239722I$ $b = -1.31799 - 1.19951I$	$-0.0807684 - 0.0270051I$	0
$u = -1.013640 + 0.084832I$ $a = 1.108450 - 0.126642I$ $b = 1.84271 - 1.22555I$	$-0.87551 + 5.31550I$	0
$u = -1.013640 - 0.084832I$ $a = 1.108450 + 0.126642I$ $b = 1.84271 + 1.22555I$	$-0.87551 - 5.31550I$	0
$u = -0.672327 + 0.781209I$ $a = 1.046300 + 0.176265I$ $b = -1.139890 - 0.738004I$	$1.33500 - 3.00337I$	0
$u = -0.672327 - 0.781209I$ $a = 1.046300 - 0.176265I$ $b = -1.139890 + 0.738004I$	$1.33500 + 3.00337I$	0
$u = -0.622637 + 0.740255I$ $a = -0.917148 + 0.701158I$ $b = 0.958255 + 0.174252I$	$-0.916866 + 0.809895I$	0
$u = -0.622637 - 0.740255I$ $a = -0.917148 - 0.701158I$ $b = 0.958255 - 0.174252I$	$-0.916866 - 0.809895I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.693162 + 0.769076I$ $a = 2.10791 - 2.00976I$ $b = -1.18015 + 1.94588I$	$4.93754 + 5.19661I$	0
$u = 0.693162 - 0.769076I$ $a = 2.10791 + 2.00976I$ $b = -1.18015 - 1.94588I$	$4.93754 - 5.19661I$	0
$u = -0.648818 + 0.814325I$ $a = -1.87305 - 0.13963I$ $b = 1.66800 + 0.67324I$	$-2.74884 - 5.46887I$	0
$u = -0.648818 - 0.814325I$ $a = -1.87305 + 0.13963I$ $b = 1.66800 - 0.67324I$	$-2.74884 + 5.46887I$	0
$u = 1.048020 + 0.087930I$ $a = 0.740915 + 0.375139I$ $b = 0.938320 - 0.000865I$	$-4.65419 - 2.84221I$	0
$u = 1.048020 - 0.087930I$ $a = 0.740915 - 0.375139I$ $b = 0.938320 + 0.000865I$	$-4.65419 + 2.84221I$	0
$u = -0.761114 + 0.735215I$ $a = 0.528661 + 0.102908I$ $b = 0.294442 + 0.779185I$	$6.06758 + 3.93578I$	0
$u = -0.761114 - 0.735215I$ $a = 0.528661 - 0.102908I$ $b = 0.294442 - 0.779185I$	$6.06758 - 3.93578I$	0
$u = -0.749660 + 0.749510I$ $a = -0.377620 + 0.179779I$ $b = -0.382925 - 0.879824I$	$6.42114 - 2.03089I$	0
$u = -0.749660 - 0.749510I$ $a = -0.377620 - 0.179779I$ $b = -0.382925 + 0.879824I$	$6.42114 + 2.03089I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.958216+0.461454I$ $a=-0.29023+1.63234I$ $b=\ \ 0.958255+0.174252I$	$-0.916866+0.809895I$	0
$u=-0.958216-0.461454I$ $a=-0.29023-1.63234I$ $b=\ \ 0.958255-0.174252I$	$-0.916866-0.809895I$	0
$u=-0.674263+0.839731I$ $a=-2.12227-1.06881I$ $b=\ \ 1.83778+1.26952I$	$2.85235-11.39960I$	0
$u=-0.674263-0.839731I$ $a=-2.12227+1.06881I$ $b=\ \ 1.83778-1.26952I$	$2.85235+11.39960I$	0
$u=\ \ 1.078220+0.052470I$ $a=-0.355684-0.249586I$ $b=-0.803714+0.656750I$	$-6.62757+1.48268I$	0
$u=\ \ 1.078220-0.052470I$ $a=-0.355684+0.249586I$ $b=-0.803714-0.656750I$	$-6.62757-1.48268I$	0
$u=\ \ 0.791471+0.735596I$ $a=-0.975220+0.562204I$ $b=\ \ 0.633168-0.948263I$	$3.25378-1.67585I$	0
$u=\ \ 0.791471-0.735596I$ $a=-0.975220-0.562204I$ $b=\ \ 0.633168+0.948263I$	$3.25378+1.67585I$	0
$u=\ \ 1.071840+0.149484I$ $a=\ \ 1.208950-0.123740I$ $b=\ \ 1.66800+0.67324I$	$-2.74884-5.46887I$	0
$u=\ \ 1.071840-0.149484I$ $a=\ \ 1.208950+0.123740I$ $b=\ \ 1.66800-0.67324I$	$-2.74884+5.46887I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.914052 + 0.017611I$ $a = 0.28796 + 2.10554I$ $b = 0.029606 + 0.357540I$	$1.30504 - 2.96740I$	$-16.6019 + 3.9985I$
$u = 0.914052 - 0.017611I$ $a = 0.28796 - 2.10554I$ $b = 0.029606 - 0.357540I$	$1.30504 + 2.96740I$	$-16.6019 - 3.9985I$
$u = 1.087550 + 0.152734I$ $a = -1.157320 + 0.302919I$ $b = -1.97161 - 0.66469I$	$-3.89961 - 11.18750I$	0
$u = 1.087550 - 0.152734I$ $a = -1.157320 - 0.302919I$ $b = -1.97161 + 0.66469I$	$-3.89961 + 11.18750I$	0
$u = -0.999343 + 0.459478I$ $a = 0.30537 - 1.95122I$ $b = -1.345570 - 0.027761I$	$-2.06219 - 4.61435I$	0
$u = -0.999343 - 0.459478I$ $a = 0.30537 + 1.95122I$ $b = -1.345570 + 0.027761I$	$-2.06219 + 4.61435I$	0
$u = 0.926856 + 0.616107I$ $a = -1.48117 - 1.93854I$ $b = 1.95814$	2.04966	0
$u = 0.926856 - 0.616107I$ $a = -1.48117 + 1.93854I$ $b = 1.95814$	2.04966	0
$u = -0.971842 + 0.584202I$ $a = 0.378274 + 1.128680I$ $b = 0.110057 - 0.403021I$	$-1.77536 + 3.05903I$	0
$u = -0.971842 - 0.584202I$ $a = 0.378274 - 1.128680I$ $b = 0.110057 + 0.403021I$	$-1.77536 - 3.05903I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.004520 + 0.529184I$ $a = -0.37789 - 1.78426I$ $b = -0.803714 + 0.656750I$	$-6.62757 + 1.48268I$	0
$u = -1.004520 - 0.529184I$ $a = -0.37789 + 1.78426I$ $b = -0.803714 - 0.656750I$	$-6.62757 - 1.48268I$	0
$u = 0.822047 + 0.815086I$ $a = 0.503520 + 0.685512I$ $b = -0.382925 - 0.879824I$	$6.42114 - 2.03089I$	0
$u = 0.822047 - 0.815086I$ $a = 0.503520 - 0.685512I$ $b = -0.382925 + 0.879824I$	$6.42114 + 2.03089I$	0
$u = 0.929297 + 0.706689I$ $a = -0.162531 + 1.378400I$ $b = -0.897351 - 0.739849I$	$2.82931 - 3.82448I$	0
$u = 0.929297 - 0.706689I$ $a = -0.162531 - 1.378400I$ $b = -0.897351 + 0.739849I$	$2.82931 + 3.82448I$	0
$u = -0.830789$ $a = -0.529711$ $b = -0.524897$	-1.36262	-6.28990
$u = 0.835882 + 0.822680I$ $a = -0.705257 - 0.359402I$ $b = 0.488855 + 0.663264I$	$5.77020 - 7.57055I$	0
$u = 0.835882 - 0.822680I$ $a = -0.705257 + 0.359402I$ $b = 0.488855 - 0.663264I$	$5.77020 + 7.57055I$	0
$u = -0.952690 + 0.699025I$ $a = -1.161850 + 0.128348I$ $b = -0.383270 + 0.555402I$	$5.47969 + 1.54222I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.952690 - 0.699025I$ $a = -1.161850 - 0.128348I$ $b = -0.383270 - 0.555402I$	$5.47969 - 1.54222I$	0
$u = 0.879439 + 0.791896I$ $a = 0.143018 + 0.204296I$ $b = 0.029606 + 0.357540I$	$1.30504 - 2.96740I$	0
$u = 0.879439 - 0.791896I$ $a = 0.143018 - 0.204296I$ $b = 0.029606 - 0.357540I$	$1.30504 + 2.96740I$	0
$u = 0.974010 + 0.672846I$ $a = -0.13241 - 2.73914I$ $b = 1.84271 + 1.22555I$	$-0.87551 - 5.31550I$	0
$u = 0.974010 - 0.672846I$ $a = -0.13241 + 2.73914I$ $b = 1.84271 - 1.22555I$	$-0.87551 + 5.31550I$	0
$u = -0.962485 + 0.705411I$ $a = 1.230370 + 0.245638I$ $b = 0.488855 - 0.663264I$	$5.77020 + 7.57055I$	0
$u = -0.962485 - 0.705411I$ $a = 1.230370 - 0.245638I$ $b = 0.488855 + 0.663264I$	$5.77020 - 7.57055I$	0
$u = -0.431386 + 0.666039I$ $a = -0.225386 - 1.395600I$ $b = 0.110057 + 0.403021I$	$-1.77536 - 3.05903I$	$-9.76833 + 2.76622I$
$u = -0.431386 - 0.666039I$ $a = -0.225386 + 1.395600I$ $b = 0.110057 - 0.403021I$	$-1.77536 + 3.05903I$	$-9.76833 - 2.76622I$
$u = 0.987595 + 0.710734I$ $a = -1.11733 + 2.72417I$ $b = -1.18015 - 1.94588I$	$4.93754 - 5.19661I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.987595 - 0.710734I$ $a = -1.11733 - 2.72417I$ $b = -1.18015 + 1.94588I$	$4.93754 + 5.19661I$	0
$u = 0.937037 + 0.779487I$ $a = -1.369200 + 0.010031I$ $b = 0.294442 - 0.779185I$	$6.06758 - 3.93578I$	0
$u = 0.937037 - 0.779487I$ $a = -1.369200 - 0.010031I$ $b = 0.294442 + 0.779185I$	$6.06758 + 3.93578I$	0
$u = -1.015290 + 0.678143I$ $a = 0.593516 - 0.877102I$ $b = -1.345570 + 0.027761I$	$-2.06219 + 4.61435I$	0
$u = -1.015290 - 0.678143I$ $a = 0.593516 + 0.877102I$ $b = -1.345570 - 0.027761I$	$-2.06219 - 4.61435I$	0
$u = 0.930205 + 0.791978I$ $a = 1.228620 + 0.396768I$ $b = -0.383270 + 0.555402I$	$5.47969 + 1.54222I$	0
$u = 0.930205 - 0.791978I$ $a = 1.228620 - 0.396768I$ $b = -0.383270 - 0.555402I$	$5.47969 - 1.54222I$	0
$u = -1.010270 + 0.702765I$ $a = 0.06764 + 1.52585I$ $b = 1.40467 - 0.62102I$	$0.31756 + 8.62089I$	0
$u = -1.010270 - 0.702765I$ $a = 0.06764 - 1.52585I$ $b = 1.40467 + 0.62102I$	$0.31756 - 8.62089I$	0
$u = -1.029790 + 0.708012I$ $a = 0.48664 - 2.20279I$ $b = -1.97161 + 0.66469I$	$-3.89961 + 11.18750I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.029790 - 0.708012I$ $a = 0.48664 + 2.20279I$ $b = -1.97161 - 0.66469I$	$-3.89961 - 11.18750I$	0
$u = -1.023700 + 0.726192I$ $a = 0.28327 + 2.73696I$ $b = 1.83778 - 1.26952I$	$2.85235 + 11.39960I$	0
$u = -1.023700 - 0.726192I$ $a = 0.28327 - 2.73696I$ $b = 1.83778 + 1.26952I$	$2.85235 - 11.39960I$	0
$u = -0.284139 + 0.668066I$ $a = -1.170660 - 0.642188I$ $b = 0.938320 + 0.000865I$	$-4.65419 + 2.84221I$	$-12.59242 - 3.99568I$
$u = -0.284139 - 0.668066I$ $a = -1.170660 + 0.642188I$ $b = 0.938320 - 0.000865I$	$-4.65419 - 2.84221I$	$-12.59242 + 3.99568I$
$u = -0.193209 + 0.694467I$ $a = -1.71483 + 0.37751I$ $b = 1.40467 - 0.62102I$	$0.31756 + 8.62089I$	$-6.58174 - 7.44305I$
$u = -0.193209 - 0.694467I$ $a = -1.71483 - 0.37751I$ $b = 1.40467 + 0.62102I$	$0.31756 - 8.62089I$	$-6.58174 + 7.44305I$
$u = -0.181530 + 0.663240I$ $a = 1.289870 - 0.508739I$ $b = -1.139890 + 0.738004I$	$1.33500 + 3.00337I$	$-4.59894 - 2.71098I$
$u = -0.181530 - 0.663240I$ $a = 1.289870 + 0.508739I$ $b = -1.139890 - 0.738004I$	$1.33500 - 3.00337I$	$-4.59894 + 2.71098I$
$u = 0.210352 + 0.417710I$ $a = 2.58989 + 0.96746I$ $b = -0.897351 - 0.739849I$	$2.82931 - 3.82448I$	$-1.91908 + 4.03755I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.210352 - 0.417710I$ $a = 2.58989 - 0.96746I$ $b = -0.897351 + 0.739849I$	$2.82931 + 3.82448I$	$-1.91908 - 4.03755I$
$u = 0.122077 + 0.444395I$ $a = -2.03594 - 1.04124I$ $b = 0.633168 + 0.948263I$	$3.25378 + 1.67585I$	$-1.01897 - 2.48260I$
$u = 0.122077 - 0.444395I$ $a = -2.03594 + 1.04124I$ $b = 0.633168 - 0.948263I$	$3.25378 - 1.67585I$	$-1.01897 + 2.48260I$
$u = 0.212119$ $a = 3.37531$ $b = -0.524897$	-1.36262	-6.28990

III. $\boldsymbol{I_3^u = \langle b,\ a+1,\ u^3 - u^2 + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^2 + u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -2u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u - 2 \\ -u^2 + u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -2u^2 \\ u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u - 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_7 c_{10}	$u^3 - u^2 + 2u - 1$
c_2, c_8	$u^3 + u^2 - 1$
c_4, c_9	u^3
c_5, c_{11}	$u^3 - u^2 + 1$
c_6, c_{12}	$u^3 + u^2 + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6 c_7, c_{10}, c_{12}	$y^3 + 3y^2 + 2y - 1$
c_2, c_5, c_8 c_{11}	$y^3 - y^2 + 2y - 1$
c_4, c_9	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = -1.00000$ $b = 0$	$6.04826 - 5.65624I$	$-4.98049 + 5.95889I$
$u = 0.877439 - 0.744862I$ $a = -1.00000$ $b = 0$	$6.04826 + 5.65624I$	$-4.98049 - 5.95889I$
$u = -0.754878$ $a = -1.00000$ $b = 0$	-2.22691	-18.0390

IV. $I^u_4 = \langle b,\ a^2 - au + 2u^2 - 3u + 2,\ u^3 - u^2 + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^2 + u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2a + a - 2u + 2 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} au + 2a \\ u^2a - au - a \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -3u^2a + au + 2u^2 + 3a - 3u \\ 2u^2a - u^2 - a + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^2a + u^2 - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_7 c_{10}	$(u^3 - u^2 + 2u - 1)^2$
c_2, c_8	$(u^3 + u^2 - 1)^2$
c_4, c_9	u^6
c_5, c_{11}	$(u^3 - u^2 + 1)^2$
c_6, c_{12}	$(u^3 + u^2 + 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6 c_7, c_{10}, c_{12}	$(y^3 + 3y^2 + 2y - 1)^2$
c_2, c_5, c_8 c_{11}	$(y^3 - y^2 + 2y - 1)^2$
c_4, c_9	y^6

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 0.947279 + 0.320410I$ $b = 0$	6.04826	$-4.56984 + 0.I$
$u = 0.877439 + 0.744862I$ $a = -0.069840 + 0.424452I$ $b = 0$	$1.91067 - 2.82812I$	$-4.21508 + 1.30714I$
$u = 0.877439 - 0.744862I$ $a = 0.947279 - 0.320410I$ $b = 0$	6.04826	$-4.56984 + 0.I$
$u = 0.877439 - 0.744862I$ $a = -0.069840 - 0.424452I$ $b = 0$	$1.91067 + 2.82812I$	$-4.21508 - 1.30714I$
$u = -0.754878$ $a = -0.37744 + 2.29387I$ $b = 0$	$1.91067 + 2.82812I$	$-4.21508 - 1.30714I$
$u = -0.754878$ $a = -0.37744 - 2.29387I$ $b = 0$	$1.91067 - 2.82812I$	$-4.21508 + 1.30714I$

V. $I_5^u = \langle b - 2,\ a - 1,\ u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3 c_5, c_6, c_7 c_8, c_{10}, c_{11} c_{12}	$u+1$
c_4, c_9	$u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_7, c_8, c_9 c_{10}, c_{11}, c_{12}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.00000$ $b = \quad 2.00000$	-4.93480	-18.0000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$(u+1)(u^3-u^2+2u-1)^3(u^{18}+6u^{17}+\cdots+2u+1)$ $\cdot(u^{84}+27u^{83}+\cdots+20u+1)$
c_2, c_8	$(u+1)(u^3+u^2-1)^3(u^{18}-3u^{16}+\cdots+2u+1)$ $\cdot(u^{84}+3u^{83}+\cdots+2u-1)$
c_3, c_7	$(u+1)(u^3-u^2+2u-1)^3(u^{18}-2u^{17}+\cdots+4u+1)$ $\cdot(u^{84}-3u^{83}+\cdots+76888u-5953)$
c_4, c_9	$u^9(u-1)(u^{18}-6u^{17}+\cdots-24u+8)(u^{42}+3u^{41}+\cdots-36u-8)^2$
c_5, c_{11}	$(u+1)(u^3-u^2+1)^3(u^{18}-3u^{16}+\cdots+2u+1)$ $\cdot(u^{84}+3u^{83}+\cdots+2u-1)$
c_6, c_{12}	$(u+1)(u^3+u^2+2u+1)^3(u^{18}+6u^{17}+\cdots+2u+1)$ $\cdot(u^{84}+27u^{83}+\cdots+20u+1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_{10} c_{12}	$(y-1)(y^3+3y^2+2y-1)^3(y^{18}+14y^{17}+\cdots+22y+1)$ $\cdot(y^{84}+61y^{83}+\cdots-492y+1)$
c_2, c_5, c_8 c_{11}	$(y-1)(y^3-y^2+2y-1)^3(y^{18}-6y^{17}+\cdots-2y+1)$ $\cdot(y^{84}-27y^{83}+\cdots-20y+1)$
c_3, c_7	$(y-1)(y^3+3y^2+2y-1)^3(y^{18}-10y^{17}+\cdots-2y+1)$ $\cdot(y^{84}+y^{83}+\cdots-880217508y+35438209)$
c_4, c_9	$y^9(y-1)(y^{18}+8y^{17}+\cdots+256y+64)$ $\cdot(y^{42}+21y^{41}+\cdots+304y+64)^2$